REMARKS

In the Office Action dated May 26, 2005, claims 22 – 29 stand rejected. Applicants respectfully submit that the Examiner's rejections of claims 22 – 29 as set forth in the Office Action have been overcome and that claims 22 – 29 are allowable over the cited art for the reasons set forth below.

A. Written Description

Claims 22 – 29 stand rejected under 35 U.S.C. 112, ¶ 1 as failing to comply with the written description requirement. These rejections are respectfully traversed.

Proper Legal Standard

To comply with 35 U.S.C. § 112, ¶ 1, "the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question." *Fujikawa v. Wattanasin*, 93 F.3d 1159, 1570 (Fed. Cir. 1996); *Fiers v. Revel*, 984 F.2d 1164, 1170 (Fed. Cir. 1993); *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983); *see also Vas-Cath v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). "The [Federal Circuit] and its predecessor have repeatedly held that claimed subject matter 'need not be described *in haec verba*' in the specification to satisfy the written description requirement." *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 922-23 (Fed. Cir. 2004). Even when the express or inherent support in the specification is not present, ***implicit*** support in the disclosure will suffice. *See* MPEP 2163(I)(B) (8th ed., August 2005) ("While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, ***implicit***, or inherent disclosure.") (emphasis added). Particularly, "the absence of definitions or details for well-established terms or procedures should not be the basis of a rejection under 35 U.S.C. 112, para. 1, for lack of adequate written description." MPEP 2163(II)(A)(1) (8th ed., August 2005).

Even though Applicants believe that the specification in the present application support all of the claims "specifically or inherently," Applicants respectfully submit that the Examiner's demand of "specific or inherent support" in the earlier portion of the Office Action is a higher standard than that required by the law or advised by MPEP. In the later portion of the Office Action, the Examiner indicates that "new limitations must be supported explicitly, implicitly or inherently." (Emphasis added.) Applicants concur that this later formulation is closer to the proper standard laid out by the Federal Circuit in *Fujikawa et al.*

Claim Language at Issue

Based upon the legal standard discussed above, Applicants respectfully submit that the specification reasonably conveys to persons skilled in the art that the inventor had possession of the claimed invention and that the specification expressly, implicitly, or inherently supports all of the limitations in the claim language.

Claim 22 recites, in pertinent part:

> 22. A unitary portable data storage device which can be directly plugged into a universal serial bus (USB) socket of a computer and which is operative to function as an alternative to a magnetic disk or CD, and which is capable of storing software for installation to the computer or of receiving and storing user's data present in the computer, the unitary portable data storage device comprising:
>
> ***a USB plug integrated into the unitary portable data storage device without an intervening cable capable of coupling the unitary portable data storage device directly to a USB socket on a computer***;
>
> * * *
>
> a non-volatile solid-state memory, ***said memory being non-removable from the unitary portable data storage device and having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD***; and
>
> a memory controller, ***the memory controller being coupled between the interface and the memory to control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD.***
>
> (Emphasis added).

Particularly, the Examiner objects to the phrases "without an intervening cable," "directly," "unitary," "integrated," "non-removable," and "having sufficient capacity . . . to serve as an alternative to a magnetic disk or CD." Applicants address these objections in several segments as follows.

"USB plug . . . <u>without an intervening cable</u> capable of coupling . . . <u>directly</u> to a USB socket on a computer."

The Examiner states that "the specification as originally filed does not support the limitation 'a USB plug integrated into the unitary portable data storage device without an intervening cable capable of coupling portable data storage device directly to a USB socket on a computer.'" Specifically, the Examiner states that the specification, although "disclos[ing] a USB plug," "does not disclose that the USB plug 1 of the device is capable of coupling **directly** to a USB socket on a computer." The Examiner further states that the specification does not "support the limitation '**without an intervening cable**.'" As discussed above, "the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question." *Fujikawa*, 93 F.3d at 1570; *Fiers*, 984 F.2d at 1170; *In re Kaslow*, 707 F.2d at 1375; *see also Vas-Cath*, 935 F.2d at 1563-64. In addition, the MPEP advises that implicit support in the specification suffice. *See* MPEP 2163(I)(B) (8th ed., August 2005).

In the Office Action, "the Examiner agrees that the specification discloses that a USB plug of the disclosed device [] is plugged into a USB socket on a computer." *See* p. 11 of the 5-26-2005 Office Action. However, by questioning whether the specification supports the disclosed USB plug's capability of being **directly** plugged into the USB socket on a computer **without an intervening cable**, the Examiner appears to be concerned about the possibility of an intervening cable between the USB plug and the USB socket. Applicants respectfully submit that, even if such possibility exists (which it actually does not as will be

explained below), the Applicants, by (i) disclosing a USB plug plugged into a USB socket on a computer and (ii) never disclosing, teaching, or suggesting the use of a connecting cable, have fully met their burden of "convey[ing] to persons skilled in the art that the inventor had possession of the subject matter in question[,]" *i.e.*, a portable storage device with a USB plug capable of being plugged **directly** into the USB socket on a computer **without an intervening cable**. *Fujikawa*, 93 F.3d at 1570; *Fiers*, 984 F.2d at 1170; *In re Kaslow*, 707 F.2d at 1375; *see also Vas-Cath*, 935 F.2d at 1563-64. The reason is that, as a skilled artisan would understand, when the USB plug disclosed in the specification is plugged into a USB socket on a computer (as agreed by the Examiner), such USB plug is plugged **directly** into the USB socket on the computer **without an intervening cable** under the USB Specification. *See* para. 17 on pp. 8-9 of *Hyde Affidavit*; *see also* pp. 4-5 of *Kim Affidavit*. Consequently, Applicants believe that claims 22 – 29 are fully supported by the specification as required under 35 U.S.C. § 112, first paragraph in terms of "**directly**" and "**without an intervening cable**."

Furthermore, Applicants respectfully submit that the possibility of an intervening cable does not exist here since such intervening cable is not permitted by the USB specification. The USB Specification defines the types of cables that are allowable under the Specification. At the time of the invention, the USB Specification did not allow an intervening cable between a USB plug and a USB socket. *See* para. 17 on pp. 8-9 of *Hyde Affidavit*. Therefore, as would be understood by a skilled artisan, the specification's disclosure that the USB plug is plugged into a USB socket on a computer has under the USB Specification inevitably led to the disclosed USB plug's capability of being **directly** plugged into a USB socket on a computer **without an intervening cable**. *See id.*

This further supports the Applicants' position that claims 22 – 29 are fully supported by the specification as required under 35 U.S.C. § 112, first paragraph in terms of "**directly**" and "**without an intervening cable.**"

"USB plug integrated into the unitary portable data storage device without an intervening cable . . . ." and "Said memory being non-removable . . . ."

The Examiner also states that "[t]he specification as originally filed does not support the limitation 'a USB plug integrated into the unitary portable data storage device.'" The Examiner further states that there is "neither specific nor inherent support for this unitary construction of the claimed device with integrated plug in the specification." Again, as discussed above, "the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question." *Fujikawa*, 93 F.3d at 1570; *Fiers*, 984 F.2d at 1170; *In re Kaslow*, 707 F.2d at 1375; *see also Vas-Cath*, 935 F.2d at 1563-64. In addition, according to the MPEP, implicit support in the specification suffices. *See* MPEP 2163(I)(B) (8th ed., August 2005).

Throughout the entire specification, the disclosed device is shown as a single, whole, non-separable device 10 in Figure 1 and is always referred to as "a portable data storage device" or "the portable storage device" in the ***singular*** form. *See, e.g.,* page 1, lines 3 – 4, lines 24 – 25; page 2, lines 8 – 9; page 3, lines 12, 15 – 20 and 22; and page 4, line 21.[1] One

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[1] The term "a" used throughout the entire specification in reference to the device 10 suggests that its elements are all part of the unitary and integrated device with no user-removable component. *See North Am. Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1575-76 (Fed. Cir. 1993) (where there is no indication in the patent specification that the inventors intended the term "a" to have other than its normal singular meaning it was proper to limit the claims to a singular device). *See also Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023-24 (Fed. Cir. 1997) (*opinion amended on other grounds*) (use of the article "a" in connection with the element "metallic gas-confining chamber" suggests a single chamber, and repeated references to "said chamber" in various portions of the device are described in the claim reinforces the singular nature of the chamber).

passage in the specification, "[i]f the installation of the software is complete, . . . *the device 10 may then be removed [] from the USB socket* on the computer" (italics supplied), describes the entire *device 10* as being removed from the socket in one single motion. *See* page 7, lines 19-22. A skilled artisan, reading these disclosures, alone or together, would clearly understand that the inventor was in possession of a unitary and integrated device in which the USB plug is integrated into the unitary portable data storage device without an intervening cable or removable memory.

The Examiner seems to be concerned with the possibility that a "single device" may have multiple non-integrated components removable by a user. Applicants respectfully submit that, even if such possibility exists (which it actually does not as will be explained below), Applicants, by (i) disclosing the claimed device's singular nature and (ii) never mentioning any removable or non-integrated component, have fully met their burden of "convey[ing] to persons skilled in the art that the inventor had possession of the subject matter in question[,]" *i.e.*, a ***unitary*** portable storage device with all parts ***integrated*** and ***non-removable***, as discussed in the previous paragraph. *Fujikawa*, 93 F.3d at 1570; *Fiers*, 984 F.2d at 1170; *In re Kaslow*, 707 F.2d at 1375; *see also Vas-Cath*, 935 F.2d at 1563-64. In addition, Applicants respectfully submit that a device ***designed*** to include ***multiple*** non-integrated or user-removable ***components*** during the device's ***normal course of usage*** will not be understood by a skilled artisan as a **single** or **singular** device (as multiple components are by definition not single or singular). This further supports the Applicants' position that claims 22 – 29 are fully supported by the specification as required under 35 U.S.C. § 112, first paragraph in terms of "**unitary**," "**integrated**," and "**non-removable**."

In addition, a skilled artisan would understand that the employment of a Philips D12 component for device 10 in Figure 1 of the specification would result in the USB plug and the D12 component being integrated on the same printed circuit board (PCB). *See* para. 22

on pp. 10-11 of *Hyde Affidavit*; *see also* para. 19 of *Kim Affidavit*. Also, a skilled artisan would understand that, unlike certain types of memory chips that are intended to be removable from the device in which the chips are installed, flash memory chips are fixedly installed within a device and are "non-removable" under normal usage of the device. *See* para. 28 on p. 7 of *Kim Affidavit*. These further support Applicants' position that the specification teaches a unitary portable mass-storage device with an integrated USB plug and a non-removable flash memory.

As further evidence that the present invention discloses a unitary, integrated portable memory device with non-removable parts, the specification discloses a "portable data storage device . . . which does not include ***moving parts*** . . . ." in lines 8-10 on page 2 (emphasis added). That is, the specification supports a portable data storage device designed to contain no part that moves relatively to other part(s).[2] If the USB plug is not "integrated" and is instead coupled to the rest of the device through an "intervening cable," then clearly the flexibility of the cable will allow the USB plug to move around and hence results in at least one part that moves relatively to other part(s). Likewise, if the memory is not "non-removable" and instead can be separated from the rest of the device by a user, then clearly the mobility of the memory after being separated by the user results in at least one part that moves relatively to other part(s). These situations will directly contradict the clear disclosure of a "portable data storage device . . . which does not include ***moving parts*** . . ." and hence will not be permissible.

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[2] The specification discloses a "portable data storage device . . . which does not include moving parts ***or*** require a mechanical drive mechanism to read data from the data storage device" in lines 8-10 on page 2 (emphasis added). That is, the claimed invention does not (1) include moving parts ***or*** (2) require a mechanical drive mechanism (that may also contain moving parts) to read data from the data storage device."

As a result, for at least the forgoing reasons, the Applicants have clearly and reasonably conveyed to those skilled in the art that Applicants were in possession of a ***unitary*** portable data storage device having a USB plug ***integrated*** into the unitary portable data storage device without an intervening cable that includes a ***non-removable*** memory. As such, claims 22 – 29 comply with the requirement under 35 U.S.C. § 112, first paragraph in terms of "**unitary**," "**integrated**," and "**non-removable**."

"Said memory . . . having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD"

The Examiner states that "[t]he specification as originally filed does not support the limitation [of] '. . . having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk of CD.'" Once again, as discussed above, "the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question." *Fujikawa*, 93 F.3d at 1570; *Fiers*, 984 F.2d at 1170; *In re Kaslow*, 707 F.2d at 1375; *see also Vas-Cath*, 935 F.2d at 1563-64. Furthermore, according to the MPEP, implicit support in the specification suffices. *See* MPEP 2163(I)(B) (8th ed., August 2005).

The specification, by first describing the shortcomings of magnetic disks or CDs and then introducing the advantage of the claimed invention over such magnetic disks or CDs, clearly intends for the claimed invention to serve as an alternative to them.[3] Because the

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[3] "[M]agnetic disks and CD ROMs . . . require a mechanical drive mechanism to be installed in or coupled to the computer to permit the data on the storage device to be read by the computer. . . . [T]he combination of the storage device and the drive mechanism for reading data from the storage device is generally bulky and/or delicate due to the moving parts that are required within the drive mechanism and/or storage device. . . . An advantage of the invention is . . . to provide a portable data storage device . . . which does not include moving parts or require a mechanical drive mechanism to read the data from the data storage device." *See* pp. 1-2 of the specification.

specification clearly intends for the claimed invention to serve as an alternative to magnetic disks or CDs, a skilled artisan would understand that the inventors were in possession of a portable memory device with a memory having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD. The reason is that, if not providing at least the same level of ***storage capacity*** as that in a magnetic disk or CD, the claimed invention will not be a viable alternative to magnetic disks and CDs.[4] This will directly contradict the intention clearly disclosed in the specification as described above. Hence, by unambiguously disclosing the intention for the claimed invention to serve as an alternative to magnetic disks and CDs, the specification has expressly, implicitly, or inherently supported the claimed invention's ***storage capacity*** to be at least comparable to a magnetic disk or CD.

As a result, the Applicants have clearly and reasonably conveyed to those skilled in the art that Applicants were in possession of a unitary portable data storage device having a memory with ***sufficient capacity*** to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD. As such, claims 22 – 29 complies with the requirement under 35 U.S.C. § 112, first paragraph in terms of "**sufficient capacity**."

B. Prior Art - Anticipation

1. U.S. Patent No. 6,038,320 (hereinafter "*Miller*")

The Examiner rejected claims 22 – 24 and 26 – 28 under 35 U.S.C. § 102 as being anticipated by *Miller*. Applicants respectfully traverse. Applicants submit that *Miller* does not disclose each and every element of the claimed invention.

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[4] This would put a ***lower limit*** of the storage capacity of the claimed invention of 1.44MB, the capacity of the floppy disk it was designed to replace.

Miller describes a security key that does not have the capability or capacity to serve as a mass-storage device, such as a "*magnetic disk or CD.*" The pending claims recite a unitary portable data storage device having, among other elements, "[a] *memory being non-removable from the unitary portable data storage device and having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD*" as well as "[a] *memory controller being coupled between the interface and the memory to control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to operate as an alternative to a magnetic disk or CD.*" Here in the pending claims, the recited limitations: (1) the memory "*having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD*" and (2) the memory controller "to *control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to operate as an alternative to a magnetic disk or CD*" are structural limitations because they describe physical characteristics of the claimed device: the capability to manage the flow of large amounts of data and the sufficient memory capacity to serve as a mass-storage device such as a magnetic disk or CD.[5] These structural limitations are not anticipated by *Miller*, which does not have the capability or capacity to serve as a mass-storage device, such as a "*magnetic disk or CD.*"

Furthermore, *Miller* cannot send back the ***"user's data"*** in its ***original*** condition received and stored into the device like the present invention. To "*operate as an alternative to a magnetic disk or CD,*" the device in the present invention must be capable of sending

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[5] Applicants respectfully note that functional terms serve as structural limitations when they are used as adjectives to define the physical characteristics of the device. *See United States Filter Corp. v. Glegg Water Conditioning, Inc.*, 2005 WL 80947, *1 (D. Mass); *In re Garnero*, 412 F.2d 276 (CCPA 1969). *See also Vanguard Products Corp. v. Parker Hannifan Corp.*, 234 F.3d 1370, 1372 (Fed. Cir. 2000); *Hazani v. U.S. Int'l Trade Comm'n*, 126 F.3d 1473, 1477 (Fed. Cir. 1997).

back the ***"user's data"*** in its ***original*** condition received and stored into the device by a user, as such capability is fundamental to any conventional mass-storage memories such as a "*magnetic disk or CD*," to which the unitary portable data storage device in the present invention "*operate[s] as an alternative.*" A key difference of the present invention from *Miller* is, therefore, in the present invention's capability of sending back the ***original*** "user's data" received and stored into the device by a user. The *Miller* device is capable of sending back ***only*** the ***pre-assigned*** key code already ***pre-stored before shipping*** inside the *Miller* device, as opposed to the ***original*** user password later selected by a user (*i.e.*, the ***original*** "user's data"). Note that the ***original*** user-selected password (*i.e.*, the ***original*** "user's data") can ***never*** be sent back. The *Miller* device can send back ***only the encrypted password*** or ***the error message*** (depending on the password comparison results). In other words, nowhere in *Miller* is disclosed the capability of sending back the ***original*** "user's data" (of the ***original*** user-selected password). As a result, the *Miller* device is clearly missing the present invention's element of "[a] *memory controller being coupled between the interface and the memory to control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to operate as an alternative to a magnetic disk or CD*" that is capable of sending back the ***original*** "user's data" received and stored into the unitary data storage device by the user.

For at least the foregoing reasons, *Miller* does not anticipate claims 22 – 24 and 26 – 28 of the present application. Thus, Applicants respectfully submit that claims 22 – 24 and 26 – 28 are patentable over *Miller* under 35 U.S.C. § 102.

2. **U.S. Patent No. 6,457,099** (hereinafter "*Gilbert*")

The Examiner also rejected claims 22 – 24 and 26 – 28 under 35 U.S.C. § 102 as being anticipated by *Gilbert*. Applicants respectfully traverse. Applicants submit that *Gilbert* does not disclose each and every element of the claimed invention.

First of all, unlike the Applicants' claimed invention, *Gilbert* never actually discloses a "USB plug" as part of the device throughout the *Gilbert* specification and/or claims. *Gilbert* describes a Programmable Dedicated Application Card (PDAC) that requires the preferred embodiment described in Column 3, lines 16-19 and in Figure 1, to realize all of the described capabilities. In this embodiment, the PDAC is connected to the computer's main internal bus and therefore has access to and intimate knowledge of the inner workings of the computer. When using the alternative embodiment as described in Column 7, lines 12-16, however, the PDAC is external to the computer and therefore does not have the ability to access the inner workings of the computer. This alternative embodiment describes a peripheral computer connected through standard serial or network methods and running independent software. *Gilbert* only casually mentions USB in this alternative embodiment, and there is nothing to imply the use of an integrated USB plug to allow direct connection to the host computer. As a result, Applicants respectfully submit that *Gilbert* does not teach or disclose a USB plug integrated into a unitary device or a storage device as claimed in the present application and that such argument is ***not*** an implicit or any other sort of admission that the specification fails to support the claimed invention.[6]

In addition, *Gilbert* does not teach a portable storage device capable of serving as an alternative to a magnetic disk or CD like the present invention. The reason is that, as opposed to a mass-storage device such as a "*magnetic disk or CD*," what *Gilbert* really

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[6] The Examiner suggests that *Gilbert* (U.S. Patent No. 6,457,099), lines 12-16 & 22-26 in col. 7, discloses as much information on the integrated USB plug in question as Applicants do. Applicants respectfully disagree because what *Gilbert* discloses there, *inter alia*, is merely an external device that may plug into a host computer via a USB. Unlike the Applicants, *Gilbert* never discloses a USB plug as part of the device or a Philips D12 component that a skilled artisan would expect to be integrated with the USB plug on the same PCB (Applicants' Figure 1) (*see* para. 22 on pp. 10-11 of *Hyde Affidavit*). These disclosures by the Applicants with the rest of Applicants' specification as a whole clearly and reasonably convey to a skilled artisan that Applicants at the time of the application were in possession of a unitary storage device with an ***integrated USB plug***.

teaches is a PDAC that executes dedicated software application(s) ***pre-stored before shipping*** in the PDAC and sends only the ***results of running the software*** to a user via a host computer to which the PDAC is coupled. *See, e.g.*, lines 45-62 in col. 1. *Gilbert* teaches that a dedicated RISC processor in the PDAC running software improves execution speed. *Gilbert* also teaches that, by running the software on the PDAC instead of on the host computer, resources of the host computer are freed up for other tasks, thereby improving the host's performance. *See, e.g.*, line 63 in col. 1 to line 7 in col. 2. *Gilbert* states that a PDAC is its own stand-alone computer system (as opposed to a mass-storage device that is only ***part*** of a complete computer system), and the use of a PDAC functions as a hardware accelerator and enhances the capabilities of the host computer system. *See, e.g.,* lines 33-36 in col. 2; lines 21-26 in col. 3. As a result, by disclosing a PDAC as a hardware accelerator, *Gilbert* does not teach a portable storage device capable of serving as an alternative to a magnetic disk or CD as the present invention.

For at least the foregoing reasons, Applicants respectfully submit that the new claims 22 – 24 and 26 – 28 are patentable over *Gilbert* under 35 U.S.C. § 102(3).

C. Prior Art - Obviousness

For the reasons discussed above, neither *Miller* nor *Gilbert* anticipates the claimed invention. Also, Applicants respectfully submit that neither of them alone or in combination renders the claimed invention obvious. *Miller* is a security device that functions like an electronic key. To a skilled artisan, an electronic key is not similar to a mass-storage device. A skilled artisan will have no reason to increase the *Miller* device's memory capacity to the level of a mass-storage device capable of serving as an alternative to a magnetic disk or CD because the size of the stored key code or encrypted password is so tiny (*e.g.*, *Miller* suggests that the password can be six bytes, *see* lines 42-43 in col. 3).

In addition, *Miller* actually teaches away from having a mass-storage device due to efficiency commonly sought by any skilled artisan in designing any kind of device. Because of the tiny memory capacity needed, a mass-storage device serving as an alternative to a magnetic disk or CD is not only unnecessary but also extremely wasteful and inefficient. In other words, to a skilled artisan, the *Miller* device should never have capability or capacity to serve as a mass-storage device.

Furthermore, the secrecy of the stored data required by *Miller* also teaches away from functioning like a mass-storage device. As discussed above, the fundamental functionality of a mass-storage device capable of serving as an alternative to a magnetic disk or CD is to send back the original "user's data" stored by a user. The *Miller* device can never send back to the host computer the original user-selected password (*i.e.*, the original "user's data"). Only the encrypted password can be sent back. In fact, because of its secrecy, the original user-selected password (*i.e.*, the original "user's data") should never be sent back to the host computer. In other words, *Miller* actually teaches away from sending back the original "user's data," the functionality fundamental to a mass-storage device. That is, to a skilled artisan, the *Miller* device should never function like a mass-storage device that sends back the original "user's data." As a result, because of all the reasons stated above, the *Miller* device does ***not*** render the present invention obvious to a skilled artisan.

Gilbert, on the other hand, is a PDAC that functions like a programmable hardware accelerator. To a skilled artisan, a PDAC or a programmable hardware accelerator is not similar to a mass-storage device. A skilled artisan will have no reason to use a PDAC or a hardware accelerator as a mass-storage device capable of serving as an alternative to a magnetic disk or CD because the functionality of a PDAC or a hardware accelerator is very different from that of a mass-storage device capable of serving as an alternative to a magnetic disk or CD.

In addition, *Gilbert* actually teaches away from functioning like a mass-storage device. The fundamental functionality of a mass-storage device capable of serving as an alternative to a magnetic disk or CD is to send back the "user's data" stored by a user. The *Gilbert* device neither stores the "user's data" into its non-volatile memory nor sends back to the host computer the "user's data." Only the results of running the software stored on the *Gilbert* device are sent back. In other words, *Gilbert* actually teaches away from sending back the "user's data," the functionality fundamental to a mass-storage device. As a result, because of all the reasons stated above, the *Gilbert* device does ***not*** render the present invention obvious to a skilled artisan.

Claims 25 stands rejected under 35 U.S.C. § 103 as being unpatentable for obviousness. Claims 25 depends from claim 22 and is patentable for at least the same rationale discussed in detail above.

Claim 29 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Margalit et al.* (U.S. Patent No. 6,748,451, hereinafter "*Margalit*") in view of *Jha et al.* (U.S. Patent No. 6,407,949, hereinafter "*Jha*"). Claim 29 is dependent on claim 22 and is therefore allowable for all reasons set forth above. Moreover, *Margalit* discloses a security device that does not have the capability of serving as an alternative to a magnetic disk or CD.[7] *Margalit* clearly states that the device is "analogous to a memory smart card." Col. 4, lines 21-22. The amount of the information on a memory smart card is very small (up to only 1 KiloByte) because of such memory smart card's very limited storage capacity at the time of the claimed invention. *See* para. 21 on p. 10 of *Hyde Affidavit*. This is entirely consistent with *Margalit's* disclosure that its design can only hold a small amount of information, *i.e.*, "information

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[7] *Margalit* describes that the PC treats the device as a specialist device and does ***not*** recognize it, or treat it, as mass-storage device like a magnetic disk or CD, as claimed in the Applicants' application. *See, e.g.*, line 5, col. 7 to line 61, col. 9 in *Margalit*.

characterizing a mobile user . . . ." *See* lines 27-32 in col. 6 of *Margalit*. "Such information may comprise user identify authentication information, banking information, access rights information, etc." *See id.* Hence, "analogous to a memory smart card," the *Margalit* device disclosed in its Figure 1 is designed to handle data of such very small amount. *See* lines 20-23 in col. 4 of *Margalit*. Since the amount of data stored is so small, there is no requirement to move this data into and out of the device at high performance. *See* para. 21 on p. 10 of *Hyde Affidavit*. In fact, *Margalit* teaches a CY7C63001A component, a low speed (1.5 Megabits per second) USB interface component, to be used in its "key" device, clearly indicating such slow data rate. *See* para. 22 on pp. 10-11 of *Hyde Affidavit*; *see also* Figures 3 and 4 of *Margalit*. As a result, a skilled artisan would understand that the CY7C63001A component taught in *Margalit* to handle only a small amount of slow data was not designed to operate in a mass-storage device serving as an alternative to a magnetic disk or CD, as claimed in Applicants' application. *See* paras. 20-21 on p. 10 of *Hyde Affidavit*. Likewise, a skilled artisan would understand that the memory capacity employed to store such small amount of data in *Margalit* does not anticipate or render obvious claims directed to a memory having sufficient capacity to serve as an alternative to a magnetic disk or CD. *See id.* Hence, the *Margalit* "key" device contains neither a USB component having the capability nor a memory having the capacity to enable its device to operate as a mass-storage device like a magnetic disk or CD, as claimed in the Applicants' application. In addition, *Margalit*'s small memory would be wholly inconsistent with the division of such already very small memory into a plurality of zones. Hence, there would be no motivation for a skilled artisan to combine *Margalit* and *Jha* to create multiple zones in the memory.

Furthermore, in Figures 3 and 4, *Margalit* seems to have defined its own proprietary plug. As such, for at least the forgoing reasons, *Margalit* does not anticipate or render obvious Applicants' claimed invention.

D. Firsthand Practical Knowledge of Unsolved Needs and Commercial Success Combined with Copying by Others Show Non-Obviousness.

Applicants submit that they have clearly demonstrated that the claimed invention is not anticipated by any prior art. It is therefore appropriate to submit evidence of secondary considerations of non-obviousness to further support the patentability of the claimed invention. The Applicants hereby respectfully attach the Affidavit of John Hyde, an expert in the field of Universal Serial Bus (USB) and USB based devices. This Affidavit presents the evidence of ***secondary considerations*** and must be considered in its entirety.

The Federal Circuit held that "[f]irsthand practical knowledge of unsolved needs in the art, by an expert, is evidence of the state of the art." *See In re Piasecki*, 745 F.2d 1468, 789 (Fed. Cir. 1984) (citing *In re McKenna*, 203 F.2d 717 (C.C.P.A. 1953)). At the time of the present invention, "[t]he long-felt needs for greater capacity storage devices (especially for music and graphic files), however, led to the development and introduction of alternative storage devices." *See* para. 13 on pp. 5-6 of *Hyde Affidavit*. "Many touted alternatives, such as IBM's 2.88MB floppy disk, Iomega's ZIP and Jaz Drives, Imation's SuperDisk, Sony's HiFD Drive, and Rewritable Compact Discs, comprise a two-part system, namely a drive (*i.e.*, the mechanism for reading and writing data from and to the storage media) and the storage media itself (usually a magnetic disk or CD). This was the approach utilized by the incumbent 'drive and media' systems." *See id.* "For various reasons, none of these touted replacements truly lived up to expectations or replaced the floppy disk as the universal

medium for storage." *See* para. 15 on p. 7 of *Hyde Affidavit.* Clearly, the expert Hyde's firsthand knowledge of unsolved needs in the art at the time of the present invention is evidence of the state of the art back then. In other words, the long-felt needs and failure by others at the time of the invention combined with the fact that the claimed invention fulfilled such long-felt needs strongly indicate the non-obviousness of Applications' present invention. *See* pp. 5-7 and para. 24 on p. 11 of *Hyde Affidavit.*

The Federal Circuit Court has also held that a combination of commercial success and copying by the infringer may provide strong evidence of non-obviousness. *See Heidelberg Harris, Inc. v. Mitsubishi Heavy Industries, Ltd.*, Civ. App. No. 99-1100 (Fed. Cir. Sept. 18, 2000) (unpublished). The Applicants' company, Trek, manufactures and sells the present invention under the trademark "ThumbDrive." Ever since the launch of the claimed invention (ThumbDrive) in March 2000, the never-before-seen products have enjoyed numerous praises from industrial commentators and tremendous commercial success because of the claimed invention's features. *See Hyde Affidavit* pp. 5 and 11-15; *see also Hyde Affidavit* pp. 11-15 for examples of the praises from industrial commentators.

"Because of all of its features, the claimed invention has been a commercial success ever since it was launched in February 2000, at CeBit 2000, which is the foremost computer and IT fair in the world. . . . [S]ince the launch, over 450,000 units of the claimed invention's various versions, *e.g.*, 'ThumbDrive Smart,' 'ThumbDrive Secure,' and the latest, the 'ThumbDrive Touch,' were sold around the world, with sales averaging 12 million Singapore dollars from 2000 to 2003 (approximately 6.8 million U.S. dollars based upon the average exchange rate from 2000 to 2003)." *Hyde Affidavit* p 5. "Apart from the CeBit and COMDEX shows in 2000, [Applicants' company] Trek also exhibited the claimed invention at the Computex show in Taiwan." *Hyde Affidavit* p. 14. In October 2001, Applicants' company Trek was selected by IBM to manufacture essentially the "ThumbDrive" products

for IBM, which were to be sold as "IBM Memory Key." *See id.* A similar deal was entered into with Sonnet Technologies in December 2001. *See id.*

"Since the launch, the claimed invention (ThumbDrive) has become close to being regarded by the industry as the true replacement for the floppy drive. This is not surprising as the claimed invention offered all of the advantages of the floppy disk (universality, compactness, affordable storage capacity, *etc.*) but with the advantage of having significantly larger storage capacities than the floppy disk, promise of even greater storage capacities in the future, but at a miniscule fraction of the size. For example, a single 128MB version has the equivalent capacity of about 88 pieces of 3.5-inch floppy disks." *Id*; *see also Hyde Affidavit* pp. 14-15 for some other examples of praises from industrial commentators after the launch of the claimed invention.

After the Applicants' company Trek introduced the claimed invention into the market, other companies have copied the claimed invention. *See Hyde Affidavit* pp. 16-17 for a non-exhaustive list of such companies and their copying products (which are ever increasing). As held by the Federal Circuit, a combination of commercial success and copying by the infringer may provide strong evidence of non-obviousness. The praises by industrial commentators clearly show the commercial success enjoyed by the claimed invention (ThumbDrive) resulted from its features claimed in the present application. This commercial success combined with copying by others clearly shows that the present invention is not obvious to a skilled artisan. *See Heidelberg*, Civ. App. No. 99-1100 (Fed. Cir. Sept. 18, 2000) (unpublished).

E. Conclusion

Applicants respectfully submit that claims 22 – 29 are fully supported by the specification as filed and are patentable over the cited art of record. As such, early notification of allowance of claims 22 – 29 is earnestly requested.

Respectfully submitted,

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